CONSOLIDATED INFORMATION TECHNOLOGY SERVICES
TASK ASSIGNMENT (TA)

1. **TITLE:** (D302) CFDLAB Computer Systems Administration and DVD Authoring Control

TA No:	RBC001-Rev12
Task Area Monitor:	**Alternate Task Area Monitor:** None
NASA POC:	**Software Control Class:** Low Control
Type of Task:	Recurring Task

2. BACKGROUND

The CFDLAB computer system consists of a heterogeneous network of Linux and Unix servers, Linux and Unix workstations, Beowulf clusters, computer resources for foreign national visitors, PC and Macintosh workstations and laptops using multiple OSes of the Computational Aerosciences Branch located in Buildings 1268, 1268B, and 1268C and associated users located in building 1209. Additionally, Linux and Unix workstations and a Beowulf cluster in the Flow Physics and Control Branch in building 1247A require system administration, and Beowulf clusters in the Hypersonic Airbreathing Propulsion Branch in building 1221 require set up, tuning and support. Support is also required for the center cluster, K, and its supporting hardware and software.

Software includes graphics software packages, as well as license managers, compilers and software development utilities, commercial and open source visualization and graphics packages, commercial and open source analysis applications, and application libraries including MPI. On-site application administration for software is required to maintain network security and resource availability for NASA personnel, contractors, and grantees, within and outside the Langley network domain.

System software includes Linux, Unix, MacOS X, and Windows operating systems. On-site system support for hardware and software is required to maintain network security and resource availability for NASA personnel, contractors, and grantees, within and outside the Langley network domain.

3. OBJECTIVE

The objective of this task assignment is to provide system administration support for the Computational Aerosciences Branch and associated users and the Flow Physics and Control Branch. Additionally, this task is to provide set up, tuning and support for Beowulf clusters in the Hypersonic Airbreathing Propulsion Branch and the Computational Aerosciences Branch.

4. GENERAL IT SUPPORT SERVICES

Services Specified Through Exhibit A:

Services will include: Application Maintenance and Management, System Administration, System Software Management, Customer Support and IT Consultation, and assist with IT Security planning and execution.

The Application Administrator shall interact with software vendors and plan upgrade paths, manage the software licensing and maintenance agreements. The Application Administrator will also monitor performance and track problems and issues of the supported software and manage the complex dependencies between applications and system software.

Refer to Exhibit A, Inventory of Equipment and Software (attached), that has been completed to define the required General IT Support Services.

The services of System and IT Security Administration shall be provided for those systems for which "System and IT Security Administration Required" is checked in Exhibit A. The level of security shall be consistent with the information category identified by the code checked for each such system (see NPG 2810.1). If these services are not required for the system as a whole, they shall be provided for any isolated processors where the information category code is entered in the SSA column.

Any system software, application software, or database software that is licensed to run on a particular item of equipment is entered in the respective column for that item. Software that does not require a license is also included if it is relevant to any of the required services.

The services of Hardware Maintenance (HM), System Software Management (SSM), Applications Management (AM) and Database Administration (DBA), are required for the items of equipment or software that are checked in the respective columns of Exhibit A.

Customer Support and IT Consultation and Training:
The Contractor shall provide the basic level of Customer Support and IT Consultation and Training given in Sections 4.7 and 4.8 of the SOW for all General IT Support Services.

Exceptions and Additional Requirements:
For systems that are covered under vendor or third-party hardware or software maintenance, contract quotes for replacement parts will be obtained from vendor or third-party sources and provided to NASA Technical Monitor for procurement.

Contractor shall assist the Government in coordination of relocation of computer equipment and network connections.

Contractor shall perform Consultation and System Backups of the PCs and Macintoshes listed in Attachment A for the Flow Physics and Control Branch as follows. The Contractor shall perform system backups of PCs and Macintoshes and shall also perform restore operations as needed including cases of system crashes or corruption. The Contractor will assist in troubleshooting and resolving problems related to computer networks with PCs, Macintoshes, network printers and AirPort base stations.

Contractor shall perform consultation for cluster/system related issues with the branch

system administrator on an ongoing basis.

Contractor personnel will be located onsite in the CFDLAB and Flow Physics and Control Branch office area.

Services will be provided from 7:30AM to 5:30PM Monday through Friday, except for Federal holidays and other days that the Center is closed.

General IT Support Services Performance Metrics

Performance Standard: The security of systems and data that fall under this TA is ensured

Performance Metrics:

Exceeds: The system meets the baseline IT security requirements for an information category with more stringent requirements than the information category of the system; there are no unpatched vulnerabilities, unless the vulnerability has been mitigated by other action, accepted by line management and approved by the LaRC IT Security Manager; user accounts are removed by the close of business of the day that the requirement for an account is terminated.

Meets: All baseline IT security requirements for the information category are either met or have a waiver for non-compliance from the LaRC IT Security Manager; the system is up-to-date with security patches or has scheduled the installation of such patches at the completion of a test that precludes immediate installation; user accounts are removed within one week of the termination of the requirement for an account; any IT Security incidents are reported to the LaRC IT Security Manager as soon as possible after they are discovered.

Fails: The system does not comply with the baseline IT security requirements for the information category and does not have a waiver for non-compliance from the LaRC IT Security Manager; the system is not up-to-date with IT security patches; user accounts, for which the requirement was terminated have not been removed after a period of two weeks; the system has an IT security incident that is not reported to the LaRC IT Security Manager.

Performance Standard: The systems software to which these services apply is fully operational and kept up-to-date with no significant disruption in capability.

Performance Metrics:

Exceeds: "Meets" and anomalies or inefficiencies are recognized and reported to the vendor or the availability of superior software is recognized and reported to the line manager.

Meets: Software upgrades are installed and fully operational within 5 days of receipt (or approval, if later) with no loss of data.

Fails: Any of the requirements of this subsection (a through f) is not satisfied.

Performance Standard: The applications software to which these services apply is fully operational and kept up-to-date with no significant disruption in capability.

Performance Metrics:

Exceeds: "Meets" and improvements are recommended and adopted; or users rate help in the use of applications very good to excellent.

Meets: The inventory, including status, of application software is current and accurate. Upgrades are installed and fully operational within 5 days of receipt (or approval, if later) with no loss of data. Users rate operation and help in use of the applications satisfactory.

Fails: Any of the requirements of this subsection (1 through 9) is not satisfied. Users rate operation and help in use of the applications less than satisfactory.

Performance Standard: DVD authoring support authoring and maintenance.

Performance Metrics:

Exceeds: All notifications of archival and porting needs are acted upon. All requests for computer solutions and maintenance are completed without delays or disruptions.

Meets: All notifications of archival and porting needs are acted upon with only minor delays and disruptions to users. Requests for computer solutions and maintenance are completed with only minor delays and disruptions.

Fails: Notifications of archival and porting needs are not acted upon or are acted upon with substantial delays and disruptions to users. Requests for computer solutions and maintenance are not completed or are completed with substantial delays and disruptions.

Performance Standard: The systems to which these services apply are operated efficiently and with minimal disruption in capability due to malfunctions.

Performance Metrics:

Exceeds: "Meets" and: significant improvement in efficiency is noted; or a successful and rapid recovery from a malfunction or disaster has been accomplished; or the degradation of capability due to malfunctions has been significantly mitigated by system administrator actions.

Meets: Daily tuning of systems is performed. Response to problems during prime shift is within 2 hours of notification. Trouble reporting system is kept current and daily follow-up of problem resolution is carried out. Users are kept informed.

Fails: Any of the requirements of this subsection (a through h) is not satisfied.

Performance Standard: The systems to which these services apply are kept up-to-date with minimum disruption in capability due to upgrades.

Performance Metrics:

Exceeds: All notifications of updates or upgrades are acted upon and all approved upgrades are installed on schedule and without disruption; or "meets" and improvements to systems are recommended and adopted.

Meets: All notifications of updates or upgrades are acted upon. All approved upgrades are installed with minor delays and disruptions.

Fails: Any of the requirements of this subsection (a through e) are not satisfied.

Performance Standard: Inventory of equipment and software is up-to-date and accurate.

Performance Metrics:

Exceeds: "Meets" and: semi-annual audit finds no deviations from the actual configuration; or improvements have been made to the configuration management system.

Meets: Data format is satisfactory, semi-annual audit finds only minor deviations from actual configuration, and tracking log is up-to-date.

Fails: Any of the requirements of this subsection (a through c) are not satisfied.

Performance Standard: Consultation meets customer needs and training provided meets students' needs. Required reports are accurate and complete

Performance Metrics:

Exceeds: Consultation and reports go beyond customer needs and are considered expert. Students rate teaching proficiency as very good or excellent. Training recommendations are made and adopted.

Meets: Consultation and reports address requirements adequately. Training schedules are met. Students rate teaching proficiency as satisfactory or better

Fails: Any of the requirements (a,b,or c) of this subsection is not met, or students rate teaching proficiency as unsatisfactory.

5. SYSTEM AND APPLICATION DEVELOPMENT SERVICES

None required.

6. WORK-AREA SPECIFIC SERVICES

Work Area Title: Data Archival and Code Porting Support

LaRC Manager: David Lockard

Work Area Description: This task includes archiving data to DVD's using a Rimage DVD authoring system connected to a Windows 2000 server. This work includes installing commercial software, authoring and maintaining scripts. This task also entails porting applications to new platforms and benchmarking their performance.

Work Area Requirements: The contractor shall assist the Government in archiving data to DVD's
using a Rimage DVD authoring system connected to a Windows PC and a Linux workstation. The contractor shall be responsible for writing and maintaining any scripts necessary to make the archiving process automated for users. The contractor will aid in diagnosing, maintaining and troubleshooting the related hardware and software.

The contractor shall assist the Government in porting codes to different hardware and software platforms. The contractor shall be involved in insuring that codes compile and execute properly on new platforms. The contractor shall also maintain records benchmarking the performance of each platform.

The contractor shall assist the Government in finding hardware and software solutions to data archival computer requirements. The contractor shall investigate alternatives and present the Government with the different options. The contractor shall be responsible for assembling Government specified hardware solutions and installing and maintaining software solutions. The software solutions may be commercial software or scripts written by the contractor.

Work Area Title: System Administration for the Center Cluster

LaRC Manager: Joseph Morrison

Work Area Description: This work area includes Systems Administration, IT Security Administration, System Software Management, Applications Management, Customer Support, and IT Consultation of center cluster machines including the 2816 core cluster 'K'.

Work Area Requirements: The Contractor shall set up, maintain, and optimize the performance of center cluster computers. This work includes installing commercial software, authoring and maintaining scripts to perform basic systems administration and monitoring tasks. This task entails documenting the system including installed software and operational procedures for center security plans and for end-users This task also entails documenting and resolving user reported problems, hardware problems and failures, and software problems and failures.

The Contractor shall ensure that all center security guidelines are followed and documented. The Contractor shall ensure that data as identified by the Government is backed using Government supplied hardware and archival data storage connectivity to Government supplied hardare is provided. The contractor shall install, debug, and maintain software including commercial software such as compilers and batch queue systems that are provided by the Government. The Contractor will aid in diagnosing, maintaining and troubleshooting all related hardware and software.

The Contractor shall assist the Government and other contractors in integrating the center cluster system with other center facilities such as the Central Storage Server (CSS).

The Contractor shall provide all documentation required by center procedures including security plans. The Contractor shall develop and maintain usage documentation for end users including lists of application software and samples of job submissions scripts. The Contractor shall document the system including installed software and operational procedures for center security plans and end users. The Contractor shall document and resolve user reported problems, hardware problems and failures, and software problems and failures.

7. Exhibit A

[Exhibit A](#)

8. SPECIAL SECURITY REQUIREMENTS

None required.

9. SOFTWARE ENGINEERING PROCESS REQUIREMENTS

None required.

10. JOINT REVIEW SCHEDULE

There will be a joint review of the work of this task at meetings to be held as needed. The following persons or their alternates are required to attend: the NASA Technical Monitor and Contractor personnel assigned to the task. The Contractor shall maintain minutes of the meetings. Technical performance, timeliness and cost will be discussed.

11. PERIOD OF PERFORMANCE

This TA is effective from 02/01/01 to 04/27/10

12. TECHNICAL PERFORMANCE RATING

In evaluating Technical Performance, quality and timeliness shall be rated as follows:

Quality: 60%   Timeliness: 40%

13. RESPONSE REQUIREMENTS

Within two weeks from the receipt of this task assignment, submit to the Contracting Officer's Representative, Task Plan via the Task Information and Planning System (TIPS). This Task Plan shall address the contractor's lead personnel, specific work plans and the associated estimated labor hours, cost and schedule.

14. GOVERNMENT ESTIMATED COST
15. FUNDING INFORMATION

Funding has not been entered for this TA.

16. MILESTONES

None required.

17. DELIVERABLES

None required.

18. FILE ATTACHMENTS

None.